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Office of Environmental Management – Grand Junction

MOAB UTAH

UMTRA Project

November 2005 Water Sampling

Validation Data Package for Routine Ground Water and Surface Water Sampling Moab, Utah

February 2006

U.S. Department of Energy

Office of Environmental Management

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November 2005 Water Sampling

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February 2006

Moab, Utah

November 1–4, 2005

Data Package Contents

This data package includes the following information:

Sampling Event Summary

Site: Moab, Utah

Sampling Period: November 1–4, 2005

The purpose of this sampling event was to collect water samples (and data) at selected ground water monitor wells and from the Colorado River. These data will be used to evaluate overall water quality. This sampling represents the third routine sampling event for 2005. Sampling was conducted in accordance with the *Surface Water and Ground Water Monitoring Plan for the Moab, Utah, Site* (DOE 2004). Samples were collected from 14 ground water and 16 surface water locations. Some wells included in the routine monitoring network were not sampled during the November 2005 sampling event if they were sampled recently as part of the interim action sampling (e.g., wells 0403 and 0407). In addition, adjustment was made to some of the routine surface water locations to focus on potential fish habitat.

Analysis and interpretation of some of the validated data presented in this package will be reported as part of the performance evaluation report on the extraction well field scheduled for May 2006. The data will also be used to update the ground water/surface water calculation set scheduled for March 2006.

SUMMARY CRITERIA

1. **Did concentrations in water from any domestic wells sampled exceed a ground water standard, primary drinking water standard, or health advisory?**

   Domestic wells were not sampled during this event.

2. **Were standards exceeded at any point-of-compliance wells?**

   Point-of-compliance wells have not been established at the Moab site.

3. **As a result of this sampling round, is there any indication of unexpected contaminated ground water movement?**

   There is no indication of unexpected contaminated ground water movement. Ground water contamination in the shallow alluvial aquifer beneath the tailings pile and former millsite area flows southeast toward the Colorado River, as described in the Site Observation Work Plan (DOE 2003). Relatively low contaminant concentrations (as compared to non-pumping periods) are evident in wells 0403 and 0407 which were sampled on October 27, 2005, and are located between the extraction well field and the Colorado River. The contaminant concentration reduction is probably due to the pumping of the Configuration 1 and 3 extraction wells and the injection of diverted Colorado River water into Configuration 2. Instead of contaminated ground water flowing toward the Colorado River, the constant extraction well pumping has reversed the ground water flow direction, and injection into Configuration 2 wells is diluting ground water contaminants with infiltration of

Colorado River water. Wells that exceed water quality standards are listed in Table 1.

Table 1. Locations Where Standards Were Exceeded in November 2005.

Analyte	Standard (mg/L)	Locations Exceeding Standards
Uranium- Total	0.044	0402 (0.26), 0404 (3.2), 0405 (3.5), 0405 (3.6), 0406 (2.1), 0437 (4.3), 0438 (2.3), 0439 (0.99), 0492 (3.6), ATP-2-S (0.15), TP-02 (18.0)

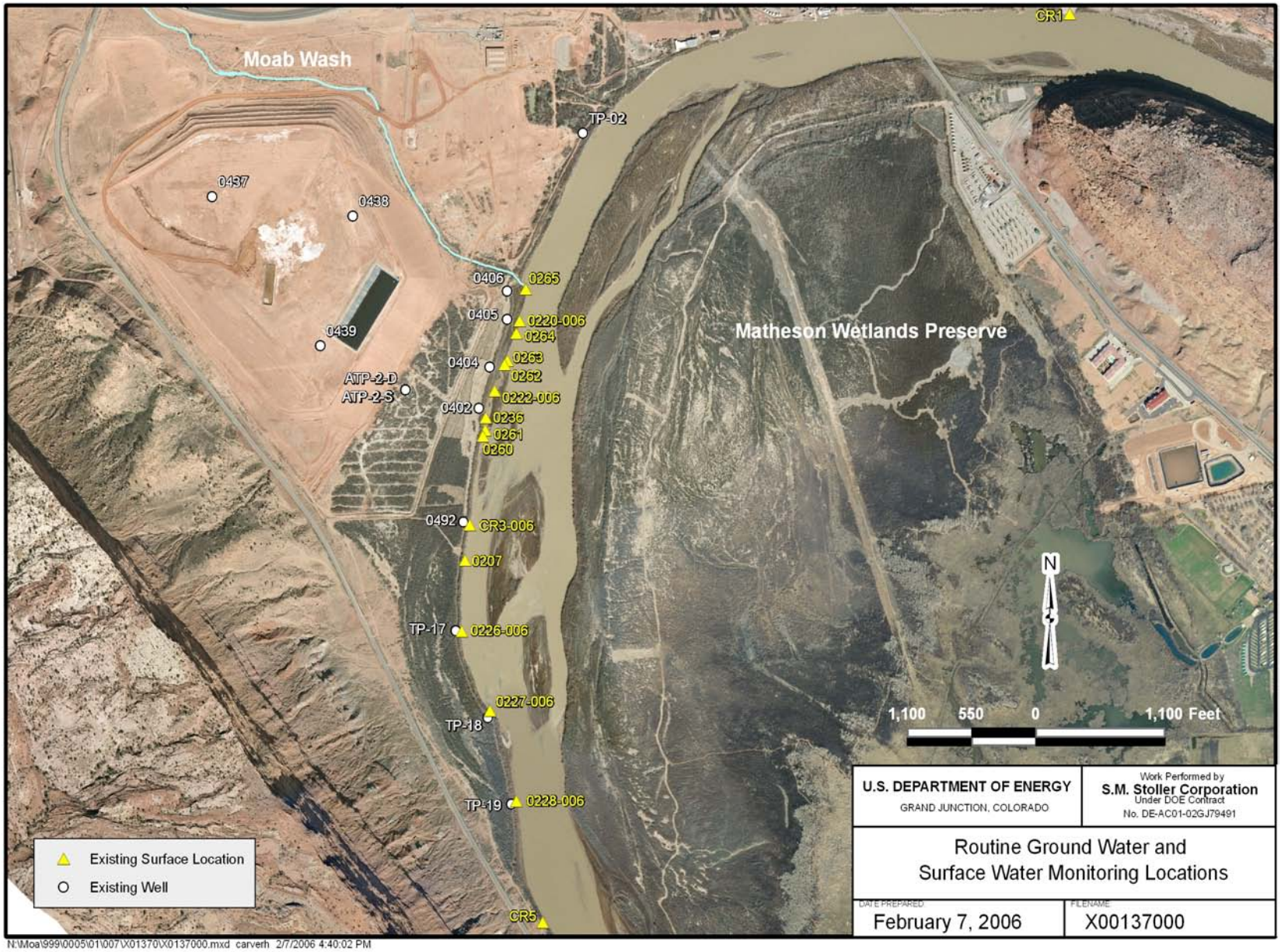
4. Is there statistical evidence that UMTRA Project related contaminants were detected in a surface body of water in greater concentrations than upstream ambient water quality?

Since monitoring of the site began ammonia, chloride, sulfate, total dissolved solids (TDS), and uranium have periodically occurred at elevated concentrations in the Colorado River. These elevated concentrations were found primarily adjacent to and just downstream from the mill tailings pile. However, the results from this sampling event indicate a decrease in contaminant concentrations in the Colorado River. Because the Colorado River was at a lower stage at the time of sampling, these lower concentrations are probably primarily due to the contaminant plume being intercepted by the interim action well field and a reversed gradient from the river towards the well field.

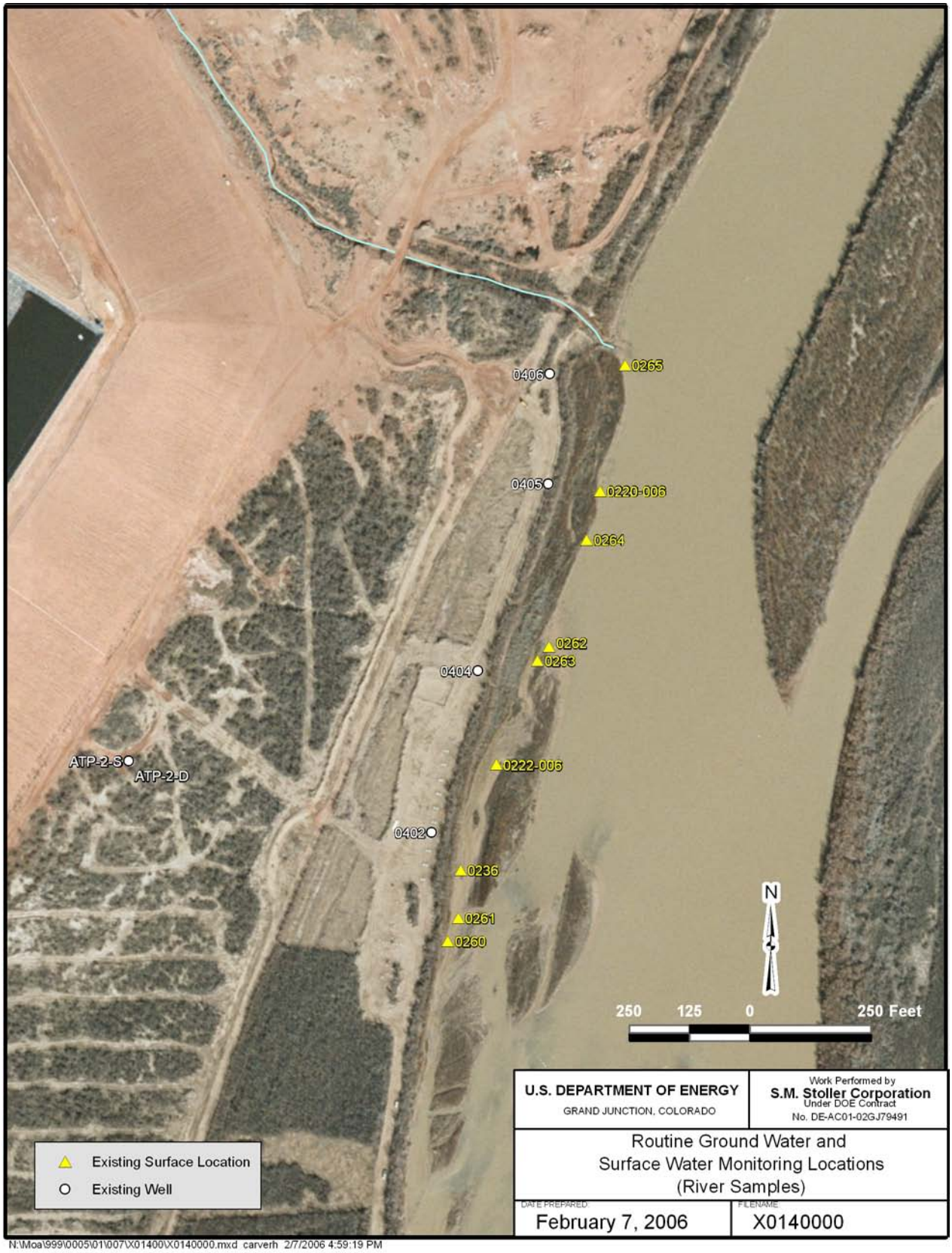
John R. Ford
John R. Ford
Ground Water Lead

2-8-2006
Date

Sample Location Maps



Routine Ground Water and Surface Water Sampling Locations (may include locations not sampled)



Routine Ground Water and Surface Water Monitoring Locations

Data Assessment Summary

Water Sampling Field Activities Verification Checklist

Project	Moab, Utah	**Date(s) of Water Sampling**	November 1–4, 2005
Date(s) of Verification	January 13, 2006	**Name of Verifier**	Jeff Price

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOP's, instructions.	NA	
2. Were the sampling locations specified in the planning documents sampled?	No	See trip report for explanation.
3. Was a pre-trip calibration conducted as specified in the above named documents?	Yes	
4. Was an operational check of the field equipment conducted twice daily?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the Category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	NA	
Was one pump/tubing volume removed prior to sampling?	NA	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	
Was the true identity of the samples recorded on the Quality Assurance Sample Log?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Requisition No.:	05100244
Sample Event:	November 1–4, 2005
Site(s):	Moab, Utah
Laboratory:	Paragon Analytics
Work Order No.:	0511045
Analysis:	Metals and Inorganics
Validator:	Steve Donivan
Review Date:	December 29, 2005

This validation was performed according to the *Environmental Procedures Catalog* (STO 6), "Standard Practice for Validation of Laboratory Data", GT-9(P). All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 1.

Table 1. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N, NH_3-N	WCH-A-005	MCAWW 350.1	MCAWW 350.1
Bromide, Br	MIS-A-038	SW-846 9056	SW-846 9056
Chloride, Cl	MIS-A-039	SW-846 9056	SW-846 9056
Sulfate, SO4	MIS-A-044	SW-846 9056	SW-846 9056
Total Dissolved Solids, TDS	WCH-A-033	MCAWW 160.1	MCAWW 160.1
Uranium, U	GJO-01	SW-846 3005A	SW-846 6020A

Data Qualifier Summary

Analytical results were qualified as listed in Table 2. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Table 2. Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
0511045-16	2258 (Equip Blank)	U	U	Less than 5 times the calibration blank
0511045-34	2261 (Equip Blank)	U	U	Less than 5 times the calibration blank

Sample Shipping/Receiving

Paragon Analytics in Fort Collins, Colorado, received 34 samples on November 5, 2005, accompanied by a Chain of Custody (COC) form. The COC form was checked to confirm that all of the samples were listed on the form with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal

documents including the COC form and the sample tickets had no errors or omissions.

Preservation and Holding Times

The sample shipment was received cool and intact with the temperature within the coolers of 1.6 °C and 1.2 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses and all samples were analyzed within the applicable holding times.

Laboratory Instrument Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods.

Method SW-846 6020A

Calibration for uranium was performed on December 7, 2005. The initial calibration was performed using six calibration standards resulting in a calibration curve with a correlation coefficient (r^2) value greater than 0.995. The absolute value of the curve intercept was less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification (CCV) checks were made at the required frequency resulting in 15 CCVs. All calibration check results met the acceptance criteria. A reporting limit verification check was made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit. The check was within the acceptance criteria range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries were stable and within acceptable ranges.

Method SW-846 9056

The initial calibrations for bromide, chloride, and sulfate were performed using five calibration standards each on November 7, 2005. The calibration curve r^2 values were greater than 0.995 and intercepts were less than 3 times the MDL. Initial calibration and calibration check standards were prepared from independent sources. Initial and continuing calibration checks were made at the required frequency resulting in twelve CCVs. The calibration checks met the acceptance criteria.

Method MCAWW 350.1

The initial calibrations for ammonia as N were performed using six calibration standards on

November 9, 2005, resulting in a calibration curve with an r^2 value greater than 0.995 and an intercept less than 3 times the MDL. Initial and continuing calibration checks were made at the required frequency resulting in six CCVs. All calibration check results were within the acceptance criteria.

Method MCAWW 160.1

There is no initial or continuing calibration requirement associated with the determination of TDS.

Method and Calibration Blanks

The uranium initial and continuing calibration blanks were below the practical quantitation limits but greater than the MDL. The uranium result for samples 0511045-16 and 0511045-34 were less than 5 times the concentration of the associated continuing calibration blank and are qualified as "U". The chloride, sulfate, ammonia as N, and TDS method blanks, and initial and continuing calibration blanks were below the MDLs.

Inductively Coupled Plasma Interference Check Sample Analysis

Inductively coupled plasma interference check samples were analyzed at the required frequency to verify the instrumental interelement and background correction factors. All check sample results met the acceptance criteria.

Matrix Spike Analysis

Matrix spike and matrix spike duplicate pairs were analyzed for uranium, bromide, chloride, sulfate, and ammonia as N as a measure of method performance in the sample matrix. The chloride and sulfate matrix spike data were not evaluated because the concentration of the unspiked sample was greater than four times the spike concentration. The spike recoveries met the recovery and precision criteria for all analytes.

Laboratory Replicate Analysis

The relative percent difference values for the laboratory replicate sample and matrix spike duplicate sample results for all analytes were less than 20 percent, indicating acceptable laboratory precision.

Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. The results were acceptable for all analytes.

Metals Serial Dilution

Serial dilutions were performed during the uranium analysis to monitor physical or chemical interferences that may exist in the sample matrix. The results met the acceptance criteria.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of uranium to reduce interferences. The required detection limits were achieved for all analytes.

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. There were no manual integrations performed and all peak integrations were satisfactory.

Electronic Data Deliverable File

The electronic data deliverable file (EDD) file arrived on December 22, 2005. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

Field Analyses/Activities

Field Activities

All monitor well results were qualified with an “F” flag in the database indicating the wells were purged and sampled using the low-flow sampling method. An equipment blank was collected and analyzed for the same constituents as the Moab environmental samples. Concentrations measured in the equipment blank were below their respective contract required detection limit; therefore, equipment blank results are considered acceptable. Duplicate samples were collected from locations 0220–006 and 0405. There are no established regulatory criteria for the evaluation of field duplicate samples; therefore, U.S. Environmental Protection Agency (EPA) guidance for laboratory duplicates (which is conservative for field duplicates) was used to assess the precision of the field duplicates. Duplicate results met the laboratory duplicate criteria of +/-20 RPD and are considered acceptable.

Certification

Results were reported in correct units for all analytes requested. Appropriate contract-required laboratory qualifiers and target analyte lists were used. The required detection limits were met when possible or an explanation of why they were not met was given in the laboratory case narrative. All analytical quality control criteria were met except as qualified on the Ground Water Quality Data by Parameter, Surface Water Quality by Parameter, or equipment/trip blank database printouts. The meaning of data qualifiers is defined on the database printouts or defined in the EPA Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media Multi-Concentration, Document Number ILMO2.0, 1991. All data in this package are considered validated and may be treated as final results.

Laboratory Validation Lead: Steve Donivan — Steve Donivan — 2-15-06 — Date

Field Activities Validation Lead: for Jeff Price — Jeff Price — 2-8-06 — Date

Attachment 1

Data Presentation

Minimums and Maximums Report

Minimums and Maximums Report

The Minimums and Maximums Report is generated by a data validation application (DataVal) used to query the SEEPro database. The DataVal compares the new data set with historical data and lists all new data that fall outside the historical data range. Values listed in the report are further screened using the following criteria. Results are not considered anomalous if: (1) identified low concentrations are the result of low detection limits; (2) the concentration detected is within 50 percent of historical minimum or maximum values; (3) there were fewer than five historical samples for comparison.

All-time high values were measured at location 0405 for the analytes chloride, TDS, and uranium.

SAMPLING DATA VALIDATION MINIMUMS AND MAXIMUMS REPORT -- No Field Parameters
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05100244
HISTORY BEGIN DATE: comparing to all historical data
REPORT DATE: 01/10/06 12:47:43: PM

				CURRENT			HISTORICAL MAXIMUM			HISTORICAL MINIMUM			COUNT	
SITE CODE	LOCATION CODE	SAMPLE DATE	ANALYTE	RESULT	QUALIFIERS LAB	DATA	RESULT	QUALIFIERS LAB	DATA	RESULT	QUALIFIERS LAB	DATA	N	N BELOW DETECT
MOA01	0405	11/03/2005	Chloride	3000		F	1700		F	1300		F	7	0
MOA01	0405	11/03/2005	Chloride	3000		F	1700		F	1300		F	7	0
MOA01	0405	11/03/2005	Total Dissolved Solids	20000		F	14000		F	12000		F	6	0
MOA01	0405	11/03/2005	Total Dissolved Solids	21000		F	14000		F	12000		F	6	0
MOA01	0405	11/03/2005	Uranium	3.6		F	1.5056			1.3		F	7	0
MOA01	0405	11/03/2005	Uranium	3.5		F	1.5056			1.3		F	7	0
MOA01	0406	11/03/2005	Total Dissolved Solids	12000		F	11000		F	10000		F	5	0
MOA01	0438	11/01/2005	Chloride	1100		F	1010		Q	951		Q	8	0
MOA01	ATP-2-D	11/01/2005	Chloride	55000		F	54000		F	940			39	0
MOA01	TP-17	11/02/2005	Uranium	0.028		F	0.025		F	0.0062		F	10	1
MOA01	TP-19	11/02/2005	Chloride	66000		F	65000		F	52600			10	0

SAMPLING DATA VALIDATION MINIMUMS AND MAXIMUMS REPORT -- No Field Parameters
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05100244
HISTORY BEGIN DATE: comparing to all historical data
REPORT DATE: 01/10/06 12:47:44: PM

SITE CODE	LOCATION CODE	SAMPLE DATE	ANALYTE	CURRENT RESULT	CURRENT QUALIFIERS LAB	CURRENT QUALIFIERS DATA	HISTORICAL MAXIMUM RESULT	HISTORICAL MAXIMUM QUALIFIERS LAB	HISTORICAL MAXIMUM QUALIFIERS DATA	HISTORICAL MINIMUM RESULT	HISTORICAL MINIMUM QUALIFIERS LAB	HISTORICAL MINIMUM QUALIFIERS DATA	COUNT N	COUNT N BELOW DETECT

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
C	Pesticide result confirmed by GC-MS.
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
D	Analyte determined in diluted sample.
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
>	Result above upper detection limit.
J	Estimated

DATA QUALIFIERS:

J	Estimated value.	F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.
L	Less than 3 bore volumes purged prior to sampling.	R	Unusable result.	X	Location is undefined.
U	Parameter analyzed for but was not detected.	Q	Qualitative result due to sampling technique		

Anomalous Data Review Checksheet

Anomalous Data Review Checksheet

Site: Moab Processing Site **Sampling Date:** November 1–4, 2005

Reviewer: Jeff Price (Name (print)) J.E. Price (Signature) 2/9/06 (Date)

Site Lead: John Ford (Name (print)) John Ford (Signature) 2/8/2006 (Date)

Date of Review: January 16, 2006

Loc. No.	Analyte	Type of Anomaly	Disposition
0405	Chloride	High	
0405	TDS	High	
0405	Uranium	High	

Water Quality Data

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0207	SL, RIV	11/03/2005	0001	0.42 - 0.42	162			#	-	-
	mg/L	0220-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	162			#	-	-
	mg/L	0222-006	SL, RIV	11/03/2005	0001	0.08 - 0.08	162			#	-	-
	mg/L	0226-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	158			#	-	-
	mg/L	0227-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	152			#	-	-
	mg/L	0228-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	160			#	-	-
	mg/L	0236	SL, RIV	11/02/2005	0001	0.17 - 0.17	154			#	-	-
	mg/L	0260	SL, RIV	11/03/2005	0001	0.17 - 0.17	156			#	-	-
	mg/L	0261	SL, RIV	11/02/2005	0001	0.17 - 0.17	148			#	-	-
	mg/L	0262	SL, RIV	11/02/2005	0001	0.17 - 0.17	152			#	-	-
	mg/L	0263	SL, RIV	11/02/2005	0001	0.17 - 0.17	74			#	-	-
	mg/L	0264	SL, RIV	11/02/2005	0001	0.17 - 0.17	160			#	-	-
	mg/L	0265	SL, RIV	11/03/2005	0001	0.20 - 0.20	150			#	-	-
	mg/L	0402	WL	11/03/2005	0001	16.40 - 16.40	248		F	#	-	-
	mg/L	0404	WL	11/03/2005	0001	17.00 - 17.00	844		F	#	-	-
	mg/L	0405	WL	11/03/2005	0001	17.60 - 17.60	756		F	#	-	-
	mg/L	0406	WL	11/03/2005	0001	17.30 - 17.30	710		F	#	-	-
	mg/L	0437	WL	11/01/2005	0001	97.00 - 97.00	592		F	#	-	-
	mg/L	0438	WL	11/01/2005	0001	118.00 - 118.00	780		F	#	-	-
	mg/L	0439	WL	11/01/2005	0001	118.00 - 118.00	810		F	#	-	-
	mg/L	0492	WL	11/02/2005	0001	16.16 - 16.16	708		F	#	-	-
	mg/L	ATP-2-D	WL, PZ	11/01/2005	0001	88.00 - 88.00	96		F	#	-	-
	mg/L	ATP-2-S	WL, PZ	11/01/2005	0001	36.00 - 36.00	192		QF	#	-	-
	mg/L	CR1	SL, RIV	11/04/2005	0001	0.33 - 0.33	166			#	-	-
	mg/L	CR3-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	152			#	-	-
	mg/L	CR5	SL, RIV	11/04/2005	0001	0.42 - 0.42	190			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	TP-02	WL	11/01/2005	0001	30.00 - 30.00	576		F	#	-	-
	mg/L	TP-17	WL	11/02/2005	0001	29.80 - 29.80	180		F	#	-	-
	mg/L	TP-18	WL	11/02/2005	0001	20.90 - 20.90	169		F	#	-	-
	mg/L	TP-19	WL	11/02/2005	0001	29.10 - 29.10	172		F	#	-	-
Ammonia Total as N	mg/L	0207	SL, RIV	11/03/2005	0001	0.42 - 0.42	0.1	U		#	0.1	-
	mg/L	0220-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	0.1	U		#	0.1	-
	mg/L	0220-006	SL, RIV	11/03/2005	0002	0.20 - 0.20	0.1	U		#	0.1	-
	mg/L	0222-006	SL, RIV	11/03/2005	0001	0.08 - 0.08	10			#	0.5	-
	mg/L	0226-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.1	U		#	0.1	-
	mg/L	0227-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.1	U		#	0.1	-
	mg/L	0228-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.1	U		#	0.1	-
	mg/L	0236	SL, RIV	11/02/2005	0001	0.17 - 0.17	11			#	0.5	-
	mg/L	0260	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.1	U		#	0.1	-
	mg/L	0261	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.33			#	0.1	-
	mg/L	0262	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.1	U		#	0.1	-
	mg/L	0263	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.1	U		#	0.1	-
	mg/L	0264	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.1	U		#	0.1	-
	mg/L	0265	SL, RIV	11/03/2005	0001	0.20 - 0.20	0.79			#	0.1	-
	mg/L	0402	WL	11/03/2005	0001	16.40 - 16.40	43		F	#	1	-
	mg/L	0404	WL	11/03/2005	0001	17.00 - 17.00	370		F	#	20	-
	mg/L	0405	WL	11/03/2005	0001	17.60 - 17.60	450		F	#	20	-
	mg/L	0405	WL	11/03/2005	0002	17.60 - 17.60	460		F	#	20	-
	mg/L	0406	WL	11/03/2005	0001	17.30 - 17.30	420		F	#	20	-
	mg/L	0437	WL	11/01/2005	0001	97.00 - 97.00	0.1	U	F	#	0.1	-
	mg/L	0438	WL	11/01/2005	0001	118.00 - 118.00	17		F	#	0.5	-
	mg/L	0439	WL	11/01/2005	0001	118.00 - 118.00	14		F	#	0.5	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	0492	WL	11/02/2005	0001	16.16 - 16.16	66		F	#	20	-
	mg/L	ATP-2-D	WL, PZ	11/01/2005	0001	88.00 - 88.00	530		F	#	20	-
	mg/L	ATP-2-S	WL, PZ	11/01/2005	0001	36.00 - 36.00	500		QF	#	20	-
	mg/L	CR1	SL, RIV	11/04/2005	0001	0.33 - 0.33	0.1	U		#	0.1	-
	mg/L	CR3-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	0.1	U		#	0.1	-
	mg/L	CR5	SL, RIV	11/04/2005	0001	0.42 - 0.42	0.1	U		#	0.1	-
	mg/L	TP-02	WL	11/01/2005	0001	30.00 - 30.00	1.3		F	#	0.1	-
	mg/L	TP-17	WL	11/02/2005	0001	29.80 - 29.80	3		F	#	0.1	-
	mg/L	TP-18	WL	11/02/2005	0001	20.90 - 20.90	3.5		F	#	0.1	-
	mg/L	TP-19	WL	11/02/2005	0001	29.10 - 29.10	3.7		F	#	0.1	-
Bromide	mg/L	0207	SL, RIV	11/03/2005	0001	0.42 - 0.42	0.2	U		#	0.2	-
	mg/L	0220-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	0.2	U		#	0.2	-
	mg/L	0220-006	SL, RIV	11/03/2005	0002	0.20 - 0.20	0.2	U		#	0.2	-
	mg/L	0222-006	SL, RIV	11/03/2005	0001	0.08 - 0.08	0.4	U		#	0.4	-
	mg/L	0226-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.2	U		#	0.2	-
	mg/L	0227-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.2	U		#	0.2	-
	mg/L	0228-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.2	U		#	0.2	-
	mg/L	0236	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.4	U		#	0.4	-
	mg/L	0260	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.2	U		#	0.2	-
	mg/L	0261	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.2	U		#	0.2	-
	mg/L	0262	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.2	U		#	0.2	-
	mg/L	0263	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.2	U		#	0.2	-
	mg/L	0264	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.2	U		#	0.2	-
	mg/L	0265	SL, RIV	11/03/2005	0001	0.20 - 0.20	0.2	U		#	0.2	-
	mg/L	0402	WL	11/03/2005	0001	16.40 - 16.40	0.4	U	F	#	0.4	-
	mg/L	0404	WL	11/03/2005	0001	17.00 - 17.00	4	U	F	#	4	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Bromide	mg/L	0405	WL	11/03/2005	0001	17.60 - 17.60	4	U	F	#	4	-
	mg/L	0405	WL	11/03/2005	0002	17.60 - 17.60	4	U	F	#	4	-
	mg/L	0406	WL	11/03/2005	0001	17.30 - 17.30	4	U	F	#	4	-
	mg/L	0437	WL	11/01/2005	0001	97.00 - 97.00	2	U	F	#	2	-
	mg/L	0438	WL	11/01/2005	0001	118.00 - 118.00	2	U	F	#	2	-
	mg/L	0439	WL	11/01/2005	0001	118.00 - 118.00	2	U	F	#	2	-
	mg/L	0492	WL	11/02/2005	0001	16.16 - 16.16	4	U	F	#	4	-
	mg/L	ATP-2-D	WL, PZ	11/01/2005	0001	88.00 - 88.00	20	U	F	#	20	-
	mg/L	ATP-2-S	WL, PZ	11/01/2005	0001	36.00 - 36.00	10	U	QF	#	10	-
	mg/L	CR1	SL, RIV	11/04/2005	0001	0.33 - 0.33	0.2	U		#	0.2	-
	mg/L	CR3-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	0.2	U		#	0.2	-
	mg/L	CR5	SL, RIV	11/04/2005	0001	0.42 - 0.42	0.2	U		#	0.2	-
	mg/L	TP-02	WL	11/01/2005	0001	30.00 - 30.00	1	U	F	#	1	-
	mg/L	TP-17	WL	11/02/2005	0001	29.80 - 29.80	20	U	F	#	20	-
	mg/L	TP-18	WL	11/02/2005	0001	20.90 - 20.90	20	U	F	#	20	-
	mg/L	TP-19	WL	11/02/2005	0001	29.10 - 29.10	20	U	F	#	20	-
Chloride	mg/L	0207	SL, RIV	11/03/2005	0001	0.42 - 0.42	110			#	2	-
	mg/L	0220-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	110			#	2	-
	mg/L	0220-006	SL, RIV	11/03/2005	0002	0.20 - 0.20	110			#	2	-
	mg/L	0222-006	SL, RIV	11/03/2005	0001	0.08 - 0.08	210			#	4	-
	mg/L	0226-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	110			#	2	-
	mg/L	0227-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	110			#	2	-
	mg/L	0228-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	110			#	2	-
	mg/L	0236	SL, RIV	11/02/2005	0001	0.17 - 0.17	190			#	4	-
	mg/L	0260	SL, RIV	11/03/2005	0001	0.17 - 0.17	110			#	2	-
	mg/L	0261	SL, RIV	11/02/2005	0001	0.17 - 0.17	110			#	2	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	0262	SL, RIV	11/02/2005	0001	0.17 - 0.17	100			#	2	-
	mg/L	0263	SL, RIV	11/02/2005	0001	0.17 - 0.17	96			#	2	-
	mg/L	0264	SL, RIV	11/02/2005	0001	0.17 - 0.17	100			#	2	-
	mg/L	0265	SL, RIV	11/03/2005	0001	0.20 - 0.20	110			#	2	-
	mg/L	0402	WL	11/03/2005	0001	16.40 - 16.40	160		F	#	4	-
	mg/L	0404	WL	11/03/2005	0001	17.00 - 17.00	2600		F	#	40	-
	mg/L	0405	WL	11/03/2005	0001	17.60 - 17.60	3000		F	#	40	-
	mg/L	0405	WL	11/03/2005	0002	17.60 - 17.60	3000		F	#	40	-
	mg/L	0406	WL	11/03/2005	0001	17.30 - 17.30	1100		F	#	40	-
	mg/L	0437	WL	11/01/2005	0001	97.00 - 97.00	1400		F	#	20	-
	mg/L	0438	WL	11/01/2005	0001	118.00 - 118.00	1100		F	#	20	-
	mg/L	0439	WL	11/01/2005	0001	118.00 - 118.00	1200		F	#	20	-
	mg/L	0492	WL	11/02/2005	0001	16.16 - 16.16	4800		F	#	100	-
	mg/L	ATP-2-D	WL, PZ	11/01/2005	0001	88.00 - 88.00	55000		F	#	1000	-
	mg/L	ATP-2-S	WL, PZ	11/01/2005	0001	36.00 - 36.00	2400		QF	#	100	-
	mg/L	CR1	SL, RIV	11/04/2005	0001	0.33 - 0.33	99			#	2	-
	mg/L	CR3-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	110			#	2	-
	mg/L	CR5	SL, RIV	11/04/2005	0001	0.42 - 0.42	100			#	2	-
	mg/L	TP-02	WL	11/01/2005	0001	30.00 - 30.00	450		F	#	10	-
	mg/L	TP-17	WL	11/02/2005	0001	29.80 - 29.80	63000		F	#	1000	-
	mg/L	TP-18	WL	11/02/2005	0001	20.90 - 20.90	63000		F	#	1000	-
	mg/L	TP-19	WL	11/02/2005	0001	29.10 - 29.10	66000		F	#	1000	-
Oxidation Reduction Potent	mV	0207	SL, RIV	11/03/2005	N001	0.42 - 0.42	138.9			#	-	-
	mV	0220-006	SL, RIV	11/03/2005	N001	0.20 - 0.20	166.6			#	-	-
	mV	0222-006	SL, RIV	11/03/2005	N001	0.08 - 0.08	183.7			#	-	-
	mV	0226-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	155.8			#	-	-

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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0227-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	172.5			#	-	-
	mV	0228-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	174.4			#	-	-
	mV	0236	SL, RIV	11/02/2005	N001	0.17 - 0.17	139.8			#	-	-
	mV	0260	SL, RIV	11/03/2005	N001	0.17 - 0.17	169.7			#	-	-
	mV	0261	SL, RIV	11/02/2005	N001	0.17 - 0.17	139.8			#	-	-
	mV	0262	SL, RIV	11/02/2005	N001	0.17 - 0.17	96.8			#	-	-
	mV	0263	SL, RIV	11/02/2005	N001	0.17 - 0.17	70.8			#	-	-
	mV	0264	SL, RIV	11/02/2005	N001	0.17 - 0.17	120.6			#	-	-
	mV	0265	SL, RIV	11/03/2005	N001	0.20 - 0.20	168.8			#	-	-
	mV	0402	WL	11/03/2005	N001	16.40 - 16.40	143.9		F	#	-	-
	mV	0404	WL	11/03/2005	N001	17.00 - 17.00	166.2		F	#	-	-
	mV	0405	WL	11/03/2005	N001	17.60 - 17.60	176.1		F	#	-	-
	mV	0406	WL	11/03/2005	N001	17.30 - 17.30	221.3		F	#	-	-
	mV	0437	WL	11/01/2005	N001	97.00 - 97.00	-26.2		F	#	-	-
	mV	0438	WL	11/01/2005	N001	118.00 - 118.00	64.9		F	#	-	-
	mV	0439	WL	11/01/2005	N001	118.00 - 118.00	1.8		F	#	-	-
	mV	0492	WL	11/02/2005	N001	16.16 - 16.16	22.2		F	#	-	-
	mV	ATP-2-D	WL, PZ	11/01/2005	N001	88.00 - 88.00	-257.6		F	#	-	-
	mV	ATP-2-S	WL, PZ	11/01/2005	N001	36.00 - 36.00	-218.3		QF	#	-	-
	mV	CR1	SL, RIV	11/04/2005	N001	0.33 - 0.33	204.3			#	-	-
	mV	CR3-006	SL, RIV	11/03/2005	N001	0.20 - 0.20	148.1			#	-	-
	mV	CR5	SL, RIV	11/04/2005	N001	0.42 - 0.42	210.3			#	-	-
	mV	TP-02	WL	11/01/2005	N001	30.00 - 30.00	-71.4		F	#	-	-
	mV	TP-17	WL	11/02/2005	N001	29.80 - 29.80	-120.4		F	#	-	-
	mV	TP-18	WL	11/02/2005	N001	20.90 - 20.90	-117.6		F	#	-	-
	mV	TP-19	WL	11/02/2005	N001	29.10 - 29.10	-307.6		F	#	-	-

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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	0207	SL, RIV	11/03/2005	N001	0.42 - 0.42	8.42			#	-	-
	s.u.	0220-006	SL, RIV	11/03/2005	N001	0.20 - 0.20	8.43			#	-	-
	s.u.	0222-006	SL, RIV	11/03/2005	N001	0.08 - 0.08	8.26			#	-	-
	s.u.	0226-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	8.42			#	-	-
	s.u.	0227-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	8.43			#	-	-
	s.u.	0228-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	8.42			#	-	-
	s.u.	0236	SL, RIV	11/02/2005	N001	0.17 - 0.17	8.34			#	-	-
	s.u.	0260	SL, RIV	11/03/2005	N001	0.17 - 0.17	8.45			#	-	-
	s.u.	0261	SL, RIV	11/02/2005	N001	0.17 - 0.17	8.43			#	-	-
	s.u.	0262	SL, RIV	11/02/2005	N001	0.17 - 0.17	8.42			#	-	-
	s.u.	0263	SL, RIV	11/02/2005	N001	0.17 - 0.17	9.22			#	-	-
	s.u.	0264	SL, RIV	11/02/2005	N001	0.17 - 0.17	8.41			#	-	-
	s.u.	0265	SL, RIV	11/03/2005	N001	0.20 - 0.20	8.32			#	-	-
	s.u.	0402	WL	11/03/2005	N001	16.40 - 16.40	7.17		F	#	-	-
	s.u.	0404	WL	11/03/2005	N001	17.00 - 17.00	6.82		F	#	-	-
	s.u.	0405	WL	11/03/2005	N001	17.60 - 17.60	6.80		F	#	-	-
	s.u.	0406	WL	11/03/2005	N001	17.30 - 17.30	7.02		F	#	-	-
	s.u.	0437	WL	11/01/2005	N001	97.00 - 97.00	7.33		F	#	-	-
	s.u.	0438	WL	11/01/2005	N001	118.00 - 118.00	6.75		F	#	-	-
	s.u.	0439	WL	11/01/2005	N001	118.00 - 118.00	6.85		F	#	-	-
	s.u.	0492	WL	11/02/2005	N001	16.16 - 16.16	7.47		F	#	-	-
	s.u.	ATP-2-D	WL, PZ	11/01/2005	N001	88.00 - 88.00	7.66		F	#	-	-
	s.u.	ATP-2-S	WL, PZ	11/01/2005	N001	36.00 - 36.00	8.25		QF	#	-	-
	s.u.	CR1	SL, RIV	11/04/2005	N001	0.33 - 0.33	8.34			#	-	-
	s.u.	CR3-006	SL, RIV	11/03/2005	N001	0.20 - 0.20	8.43			#	-	-
	s.u.	CR5	SL, RIV	11/04/2005	N001	0.42 - 0.42	8.43			#	-	-

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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	TP-02	WL	11/01/2005	N001	30.00 - 30.00	7.21		F	#	-	-
	s.u.	TP-17	WL	11/02/2005	N001	29.80 - 29.80	7.12		F	#	-	-
	s.u.	TP-18	WL	11/02/2005	N001	20.90 - 20.90	7.15		F	#	-	-
	s.u.	TP-19	WL	11/02/2005	N001	29.10 - 29.10	6.75		F	#	-	-
Specific Conductance	umhos/cm	0207	SL, RIV	11/03/2005	N001	0.42 - 0.42	1131			#	-	-
	umhos/cm	0220-006	SL, RIV	11/03/2005	N001	0.20 - 0.20	1122			#	-	-
	umhos/cm	0222-006	SL, RIV	11/03/2005	N001	0.08 - 0.08	2223			#	-	-
	umhos/cm	0226-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	1118			#	-	-
	umhos/cm	0227-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	1118			#	-	-
	umhos/cm	0228-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	1121			#	-	-
	umhos/cm	0236	SL, RIV	11/02/2005	N001	0.17 - 0.17	1882			#	-	-
	umhos/cm	0260	SL, RIV	11/03/2005	N001	0.17 - 0.17	1126			#	-	-
	umhos/cm	0261	SL, RIV	11/02/2005	N001	0.17 - 0.17	1124			#	-	-
	umhos/cm	0262	SL, RIV	11/02/2005	N001	0.17 - 0.17	1088			#	-	-
	umhos/cm	0263	SL, RIV	11/02/2005	N001	0.17 - 0.17	1340			#	-	-
	umhos/cm	0264	SL, RIV	11/02/2005	N001	0.17 - 0.17	1074			#	-	-
	umhos/cm	0265	SL, RIV	11/03/2005	N001	0.20 - 0.20	1178			#	-	-
	umhos/cm	0402	WL	11/03/2005	N001	16.40 - 16.40	2096		F	#	-	-
	umhos/cm	0404	WL	11/03/2005	N001	17.00 - 17.00	20251		F	#	-	-
	umhos/cm	0405	WL	11/03/2005	N001	17.60 - 17.60	22099		F	#	-	-
	umhos/cm	0406	WL	11/03/2005	N001	17.30 - 17.30	14226		F	#	-	-
	umhos/cm	0437	WL	11/01/2005	N001	97.00 - 97.00	10328		F	#	-	-
	umhos/cm	0438	WL	11/01/2005	N001	118.00 - 118.00	8534		F	#	-	-
	umhos/cm	0439	WL	11/01/2005	N001	118.00 - 118.00	8637		F	#	-	-
	umhos/cm	0492	WL	11/02/2005	N001	16.16 - 16.16	23055		F	#	-	-
	umhos/cm	ATP-2-D	WL, PZ	11/01/2005	N001	88.00 - 88.00	111181		F	#	-	-

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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	ATP-2-S	WL, PZ	11/01/2005	N001	36.00 - 36.00	18585		QF	#	-	-
	umhos/cm	CR1	SL, RIV	11/04/2005	N001	0.33 - 0.33	1141			#	-	-
	umhos/cm	CR3-006	SL, RIV	11/03/2005	N001	0.20 - 0.20	1136			#	-	-
	umhos/cm	CR5	SL, RIV	11/04/2005	N001	0.42 - 0.42	1138			#	-	-
	umhos/cm	TP-02	WL	11/01/2005	N001	30.00 - 30.00	3778		F	#	-	-
	umhos/cm	TP-17	WL	11/02/2005	N001	29.80 - 29.80	118347		F	#	-	-
	umhos/cm	TP-18	WL	11/02/2005	N001	20.90 - 20.90	121799		F	#	-	-
	umhos/cm	TP-19	WL	11/02/2005	N001	29.10 - 29.10	123878		F	#	-	-
Sulfate	mg/L	0207	SL, RIV	11/03/2005	0001	0.42 - 0.42	290			#	5	-
	mg/L	0220-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	290			#	5	-
	mg/L	0220-006	SL, RIV	11/03/2005	0002	0.20 - 0.20	280			#	5	-
	mg/L	0222-006	SL, RIV	11/03/2005	0001	0.08 - 0.08	800			#	10	-
	mg/L	0226-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	290			#	5	-
	mg/L	0227-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	290			#	5	-
	mg/L	0228-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	290			#	5	-
	mg/L	0236	SL, RIV	11/02/2005	0001	0.17 - 0.17	660			#	10	-
	mg/L	0260	SL, RIV	11/03/2005	0001	0.17 - 0.17	290			#	5	-
	mg/L	0261	SL, RIV	11/02/2005	0001	0.17 - 0.17	290			#	5	-
	mg/L	0262	SL, RIV	11/02/2005	0001	0.17 - 0.17	280			#	5	-
	mg/L	0263	SL, RIV	11/02/2005	0001	0.17 - 0.17	250			#	5	-
	mg/L	0264	SL, RIV	11/02/2005	0001	0.17 - 0.17	270			#	5	-
	mg/L	0265	SL, RIV	11/03/2005	0001	0.20 - 0.20	310			#	5	-
	mg/L	0402	WL	11/03/2005	0001	16.40 - 16.40	630		F	#	10	-
	mg/L	0404	WL	11/03/2005	0001	17.00 - 17.00	9800		F	#	100	-
	mg/L	0405	WL	11/03/2005	0001	17.60 - 17.60	11000		F	#	100	-
	mg/L	0405	WL	11/03/2005	0002	17.60 - 17.60	11000		F	#	100	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	0406	WL	11/03/2005	0001	17.30 - 17.30	7500		F	#	100	-
	mg/L	0437	WL	11/01/2005	0001	97.00 - 97.00	4300		F	#	50	-
	mg/L	0438	WL	11/01/2005	0001	118.00 - 118.00	4200		F	#	50	-
	mg/L	0439	WL	11/01/2005	0001	118.00 - 118.00	3800		F	#	50	-
	mg/L	0492	WL	11/02/2005	0001	16.16 - 16.16	9500		F	#	100	-
	mg/L	ATP-2-D	WL, PZ	11/01/2005	0001	88.00 - 88.00	5600		F	#	50	-
	mg/L	ATP-2-S	WL, PZ	11/01/2005	0001	36.00 - 36.00	8600		QF	#	250	-
	mg/L	CR1	SL, RIV	11/04/2005	0001	0.33 - 0.33	290			#	5	-
	mg/L	CR3-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	300			#	5	-
	mg/L	CR5	SL, RIV	11/04/2005	0001	0.42 - 0.42	310			#	5	-
	mg/L	TP-02	WL	11/01/2005	0001	30.00 - 30.00	1100		F	#	25	-
	mg/L	TP-17	WL	11/02/2005	0001	29.80 - 29.80	5200		F	#	50	-
	mg/L	TP-18	WL	11/02/2005	0001	20.90 - 20.90	5000		F	#	50	-
	mg/L	TP-19	WL	11/02/2005	0001	29.10 - 29.10	5100		F	#	50	-
Temperature	C	0207	SL, RIV	11/03/2005	N001	0.42 - 0.42	11.01			#	-	-
	C	0220-006	SL, RIV	11/03/2005	N001	0.20 - 0.20	10.45			#	-	-
	C	0222-006	SL, RIV	11/03/2005	N001	0.08 - 0.08	10.88			#	-	-
	C	0227-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	12.14			#	-	-
	C	0228-006	SL, RIV	11/03/2005	N001	0.17 - 0.17	12.00			#	-	-
	C	0236	SL, RIV	11/02/2005	N001	0.17 - 0.17	12.31			#	-	-
	C	0260	SL, RIV	11/03/2005	N001	0.17 - 0.17	10.56			#	-	-
	C	0261	SL, RIV	11/02/2005	N001	0.17 - 0.17	10.56			#	-	-
	C	0262	SL, RIV	11/02/2005	N001	0.17 - 0.17	11.13			#	-	-
	C	0263	SL, RIV	11/02/2005	N001	0.17 - 0.17	15.00			#	-	-
	C	0264	SL, RIV	11/02/2005	N001	0.17 - 0.17	10.73			#	-	-
	C	0265	SL, RIV	11/03/2005	N001	0.20 - 0.20	10.01			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0402	WL	11/03/2005	N001	16.40 - 16.40	17.62		F	#	-	-
	C	0404	WL	11/03/2005	N001	17.00 - 17.00	17.57		F	#	-	-
	C	0405	WL	11/03/2005	N001	17.60 - 17.60	18.48		F	#	-	-
	C	0406	WL	11/03/2005	N001	17.30 - 17.30	18.74		F	#	-	-
	C	0437	WL	11/01/2005	N001	97.00 - 97.00	16.77		F	#	-	-
	C	0438	WL	11/01/2005	N001	118.00 - 118.00	17.38		F	#	-	-
	C	0439	WL	11/01/2005	N001	118.00 - 118.00	17.03		F	#	-	-
	C	0492	WL	11/02/2005	N001	16.16 - 16.16	16.26		F	#	-	-
	C	ATP-2-D	WL, PZ	11/01/2005	N001	88.00 - 88.00	17.54		F	#	-	-
	C	ATP-2-S	WL, PZ	11/01/2005	N001	36.00 - 36.00	18.28		QF	#	-	-
	C	CR1	SL, RIV	11/04/2005	N001	0.33 - 0.33	11.18			#	-	-
	C	CR3-006	SL, RIV	11/03/2005	N001	0.20 - 0.20	11.51			#	-	-
	C	CR5	SL, RIV	11/04/2005	N001	0.42 - 0.42	10.68			#	-	-
	C	TP-02	WL	11/01/2005	N001	30.00 - 30.00	16.38		F	#	-	-
	C	TP-17	WL	11/02/2005	N001	29.80 - 29.80	14.02		F	#	-	-
	C	TP-18	WL	11/02/2005	N001	20.90 - 20.90	14.22		F	#	-	-
	C	TP-19	WL	11/02/2005	N001	29.10 - 29.10	15.14		F	#	-	-
Total Dissolved Solids	mg/L	0207	SL, RIV	11/03/2005	0001	0.42 - 0.42	770			#	40	-
	mg/L	0220-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	760			#	40	-
	mg/L	0220-006	SL, RIV	11/03/2005	0002	0.20 - 0.20	780			#	40	-
	mg/L	0222-006	SL, RIV	11/03/2005	0001	0.08 - 0.08	1700			#	40	-
	mg/L	0226-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	750			#	40	-
	mg/L	0227-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	770			#	40	-
	mg/L	0228-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	780			#	40	-
	mg/L	0236	SL, RIV	11/02/2005	0001	0.17 - 0.17	1400			#	40	-
	mg/L	0260	SL, RIV	11/03/2005	0001	0.17 - 0.17	740			#	40	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Total Dissolved Solids	mg/L	0261	SL, RIV	11/02/2005	0001	0.17 - 0.17	740			#	40	-
	mg/L	0262	SL, RIV	11/02/2005	0001	0.17 - 0.17	740			#	40	-
	mg/L	0263	SL, RIV	11/02/2005	0001	0.17 - 0.17	660			#	40	-
	mg/L	0264	SL, RIV	11/02/2005	0001	0.17 - 0.17	760			#	40	-
	mg/L	0265	SL, RIV	11/03/2005	0001	0.20 - 0.20	840			#	40	-
	mg/L	0402	WL	11/03/2005	0001	16.40 - 16.40	1300		F	#	40	-
	mg/L	0404	WL	11/03/2005	0001	17.00 - 17.00	19000		F	#	400	-
	mg/L	0405	WL	11/03/2005	0001	17.60 - 17.60	21000		F	#	400	-
	mg/L	0405	WL	11/03/2005	0002	17.60 - 17.60	20000		F	#	400	-
	mg/L	0406	WL	11/03/2005	0001	17.30 - 17.30	12000		F	#	400	-
	mg/L	0437	WL	11/01/2005	0001	97.00 - 97.00	9200		F	#	200	-
	mg/L	0438	WL	11/01/2005	0001	118.00 - 118.00	8500		F	#	200	-
	mg/L	0439	WL	11/01/2005	0001	118.00 - 118.00	8200		F	#	200	-
	mg/L	0492	WL	11/02/2005	0001	16.16 - 16.16	22000		F	#	400	-
	mg/L	ATP-2-D	WL, PZ	11/01/2005	0001	88.00 - 88.00	97000		F	#	2000	-
	mg/L	ATP-2-S	WL, PZ	11/01/2005	0001	36.00 - 36.00	15000		QF	#	1000	-
	mg/L	CR1	SL, RIV	11/04/2005	0001	0.33 - 0.33	770			#	20	-
	mg/L	CR3-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	770			#	20	-
	mg/L	CR5	SL, RIV	11/04/2005	0001	0.42 - 0.42	770			#	20	-
	mg/L	TP-02	WL	11/01/2005	0001	30.00 - 30.00	2900		F	#	80	-
	mg/L	TP-17	WL	11/02/2005	0001	29.80 - 29.80	110000		F	#	2000	-
	mg/L	TP-18	WL	11/02/2005	0001	20.90 - 20.90	110000		F	#	2000	-
	mg/L	TP-19	WL	11/02/2005	0001	29.10 - 29.10	110000		F	#	2000	-
Turbidity	NTU	0222-006	SL, RIV	11/03/2005	N001	0.08 - 0.08	54.3			#	-	-
	NTU	0263	SL, RIV	11/02/2005	N001	0.17 - 0.17	52.8			#	-	-
	NTU	0402	WL	11/03/2005	N001	16.40 - 16.40	1.63		F	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0404	WL	11/03/2005	N001	17.00 - 17.00	3.84		F	#	-	-
	NTU	0405	WL	11/03/2005	N001	17.60 - 17.60	2.10		F	#	-	-
	NTU	0406	WL	11/03/2005	N001	17.30 - 17.30	3.20		F	#	-	-
	NTU	0437	WL	11/01/2005	N001	97.00 - 97.00	2.98		F	#	-	-
	NTU	0438	WL	11/01/2005	N001	118.00 - 118.00	2.02		F	#	-	-
	NTU	0439	WL	11/01/2005	N001	118.00 - 118.00	1.73		F	#	-	-
	NTU	0492	WL	11/02/2005	N001	16.16 - 16.16	9.85		F	#	-	-
	NTU	ATP-2-D	WL, PZ	11/01/2005	N001	88.00 - 88.00	6.83		F	#	-	-
	NTU	ATP-2-S	WL, PZ	11/01/2005	N001	36.00 - 36.00	3.31		QF	#	-	-
	NTU	CR1	SL, RIV	11/04/2005	N001	0.33 - 0.33	194			#	-	-
	NTU	TP-02	WL	11/01/2005	N001	30.00 - 30.00	8.70		F	#	-	-
	NTU	TP-17	WL	11/02/2005	N001	29.80 - 29.80	5.75		F	#	-	-
	NTU	TP-18	WL	11/02/2005	N001	20.90 - 20.90	8.96		F	#	-	-
	NTU	TP-19	WL	11/02/2005	N001	29.10 - 29.10	8.59		F	#	-	-
Uranium	mg/L	0207	SL, RIV	11/03/2005	0001	0.42 - 0.42	0.0071			#	4.8E-06	-
	mg/L	0220-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	0.0087			#	4.8E-06	-
	mg/L	0220-006	SL, RIV	11/03/2005	0002	0.20 - 0.20	0.0078			#	4.8E-06	-
	mg/L	0222-006	SL, RIV	11/03/2005	0001	0.08 - 0.08	0.150			#	2.4E-05	-
	mg/L	0226-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.0053			#	2.4E-05	-
	mg/L	0227-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.0052			#	2.4E-05	-
	mg/L	0228-006	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.005			#	2.4E-05	-
	mg/L	0236	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.130			#	2.4E-05	-
	mg/L	0260	SL, RIV	11/03/2005	0001	0.17 - 0.17	0.0075			#	4.8E-06	-
	mg/L	0261	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.010			#	2.4E-05	-
	mg/L	0262	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.0076			#	4.8E-06	-
	mg/L	0263	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.0056			#	4.8E-06	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0264	SL, RIV	11/02/2005	0001	0.17 - 0.17	0.0078			#	4.8E-06	-
	mg/L	0265	SL, RIV	11/03/2005	0001	0.20 - 0.20	0.015			#	2.4E-05	-
	mg/L	0402	WL	11/03/2005	0001	16.40 - 16.40	0.260		F	#	4.8E-05	-
	mg/L	0404	WL	11/03/2005	0001	17.00 - 17.00	3.200		F	#	0.00048	-
	mg/L	0405	WL	11/03/2005	0001	17.60 - 17.60	3.500		F	#	0.00024	-
	mg/L	0405	WL	11/03/2005	0002	17.60 - 17.60	3.600		F	#	0.00024	-
	mg/L	0406	WL	11/03/2005	0001	17.30 - 17.30	2.100		F	#	0.00024	-
	mg/L	0437	WL	11/01/2005	0001	97.00 - 97.00	4.300		F	#	0.00048	-
	mg/L	0438	WL	11/01/2005	0001	118.00 - 118.00	2.300		F	#	0.00024	-
	mg/L	0439	WL	11/01/2005	0001	118.00 - 118.00	0.990		F	#	0.00024	-
	mg/L	0492	WL	11/02/2005	0001	16.16 - 16.16	3.600		F	#	0.00048	-
	mg/L	ATP-2-D	WL, PZ	11/01/2005	0001	88.00 - 88.00	0.024		F	#	4.8E-06	-
	mg/L	ATP-2-S	WL, PZ	11/01/2005	0001	36.00 - 36.00	0.150		QF	#	2.4E-05	-
	mg/L	CR1	SL, RIV	11/04/2005	0001	0.33 - 0.33	0.0055			#	4.8E-06	-
	mg/L	CR3-006	SL, RIV	11/03/2005	0001	0.20 - 0.20	0.0068			#	2.4E-05	-
	mg/L	CR5	SL, RIV	11/04/2005	0001	0.42 - 0.42	0.0064			#	4.8E-06	-
	mg/L	TP-02	WL	11/01/2005	0001	30.00 - 30.00	18.000		F	#	0.0048	-
	mg/L	TP-17	WL	11/02/2005	0001	29.80 - 29.80	0.028		F	#	2.4E-05	-
	mg/L	TP-18	WL	11/02/2005	0001	20.90 - 20.90	0.015		F	#	2.4E-05	-
	mg/L	TP-19	WL	11/02/2005	0001	29.10 - 29.10	0.00003	B	F	#	4.8E-06	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE200 WHERE site_code='MOA01' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #11/1/2005# and #11/5/2005#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LOCATION TYPES: SL SURFACE LOCATION WL WELL

LOCATION SUBTYPES: PZ Piezometer RIV River

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

Water Level Data

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 1/16/2006 1:06 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
0402	O	3968.63	11/03/2005	16:25	15.29	3953.34	
0404	O	3968.30	11/03/2005	16:00	15.13	3953.17	
0405	O	3968.47	11/03/2005	15:21	14.37	3954.10	
0406	O	3969.91	11/03/2005	14:45	15.55	3954.36	
0437	O	4048.25	11/01/2005	14:18	89.57	3958.68	
0438	O	4054.22	11/01/2005	13:25	97.07	3957.15	
0439	O	4055.27	11/01/2005	13:51	98.38	3956.89	
0492		3967.64	11/02/2005	12:13	15.06	-15.06	
ATP-2-D	O	3967.05	11/01/2005	15:27	14.35	3952.70	
ATP-2-S	O	3967.04	11/01/2005	15:11	12.40	3954.64	
TP-02	O	3975.55	11/01/2005	16:02	20.57	3954.98	
TP-17	D	3963.69	11/02/2005	08:55	12.04	3951.65	
TP-18	D	3963.63	11/02/2005	09:44	11.40	3952.23	
TP-19	D	3962.17	11/02/2005	10:27	10.21	3951.96	

RECORDS: SELECTED FROM USEE700 WHERE site_code='MOA01' AND LOG_DATE between #11/1/2005# and #11/5/2005#

FLOW CODES: D DOWN GRADIENT O ON-SITE

WATER LEVEL FLAGS:

Blanks Report

BLANKS REPORT
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05100244
REPORT DATE: 01/10/06 12:47:28: PM

PARAMETER	SITE CODE	LOCATION ID	SAMPLE DATE	SAMPLE ID	UNITS	RESULT	QUALIFIERS LAB	QUALIFIERS DATA	DETECTION LIMIT	UNCERTAINTY	SAMPLE TYPE
Ammonia Total as N	MOA01	0999	11/03/2005	0001	mg/L	0.1	U		0.1		E
Ammonia Total as N	MOA01	0999	11/04/2005	0001	mg/L	0.1	U		0.1		E
Bromide	MOA01	0999	11/03/2005	0001	mg/L	0.2	U		0.2		E
Bromide	MOA01	0999	11/04/2005	0001	mg/L	0.2	U		0.2		E
Chloride	MOA01	0999	11/03/2005	0001	mg/L	0.2	U		0.2		E
Chloride	MOA01	0999	11/04/2005	0001	mg/L	0.2	U		0.2		E
Sulfate	MOA01	0999	11/03/2005	0001	mg/L	0.5	U		0.5		E
Sulfate	MOA01	0999	11/04/2005	0001	mg/L	0.5	U		0.5		E
Total Dissolved Solids	MOA01	0999	11/03/2005	0001	mg/L	22			20		E
Total Dissolved Solids	MOA01	0999	11/04/2005	0001	mg/L	20	U		20		E
Uranium	MOA01	0999	11/03/2005	0001	mg/L	0.00003	B	U	0.0000048		E
Uranium	MOA01	0999	11/04/2005	0001	mg/L	0.000052	B	U	0.0000048		E

BLANKS REPORT
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05100244
REPORT DATE: 01/10/06 12:47:28: PM

PARAMETER	SITE CODE	LOCATION ID	SAMPLE DATE	ID	UNITS	RESULT	QUALIFIERS LAB	QUALIFIERS DATA	DETECTION LIMIT	UNCERTAINTY	SAMPLE TYPE

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
C	Pesticide result confirmed by GC-MS.
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
D	Analyte determined in diluted sample.
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
>	Result above upper detection limit.
J	Estimated

DATA QUALIFIERS:

J	Estimated value.	F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.
L	Less than 3 bore volumes purged prior to sampling.	R	Unusable result.	X	Location is undefined.
U	Parameter analyzed for but was not detected.	Q	Qualitative result due to sampling technique		

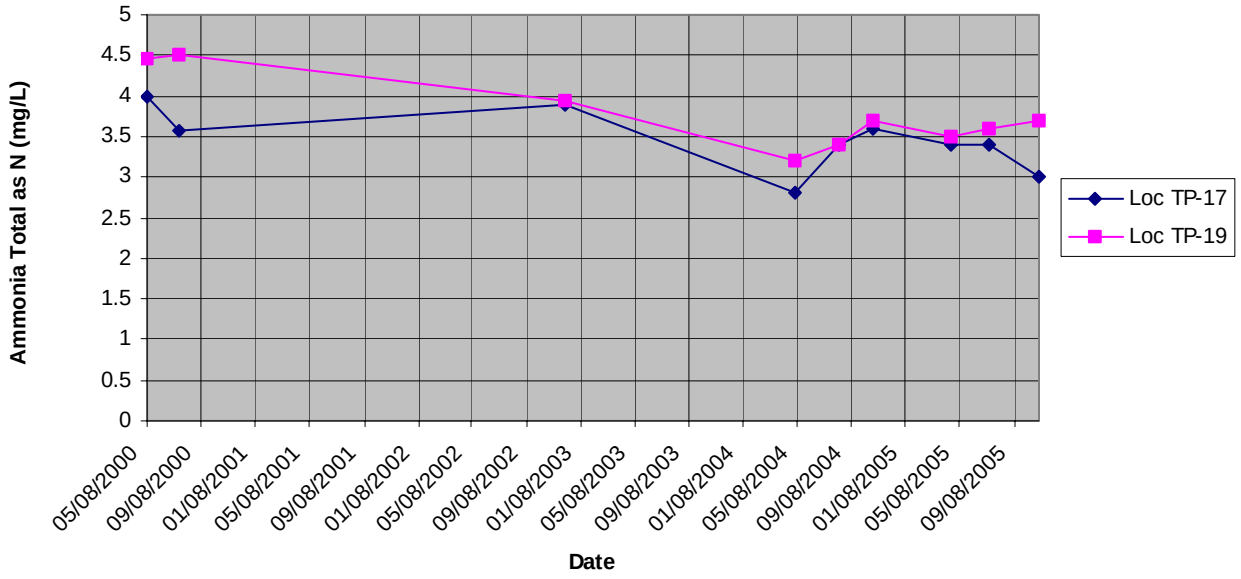
SAMPLE TYPES:

E	EQUIPMENT BLANK

Time Versus Concentration Graphs

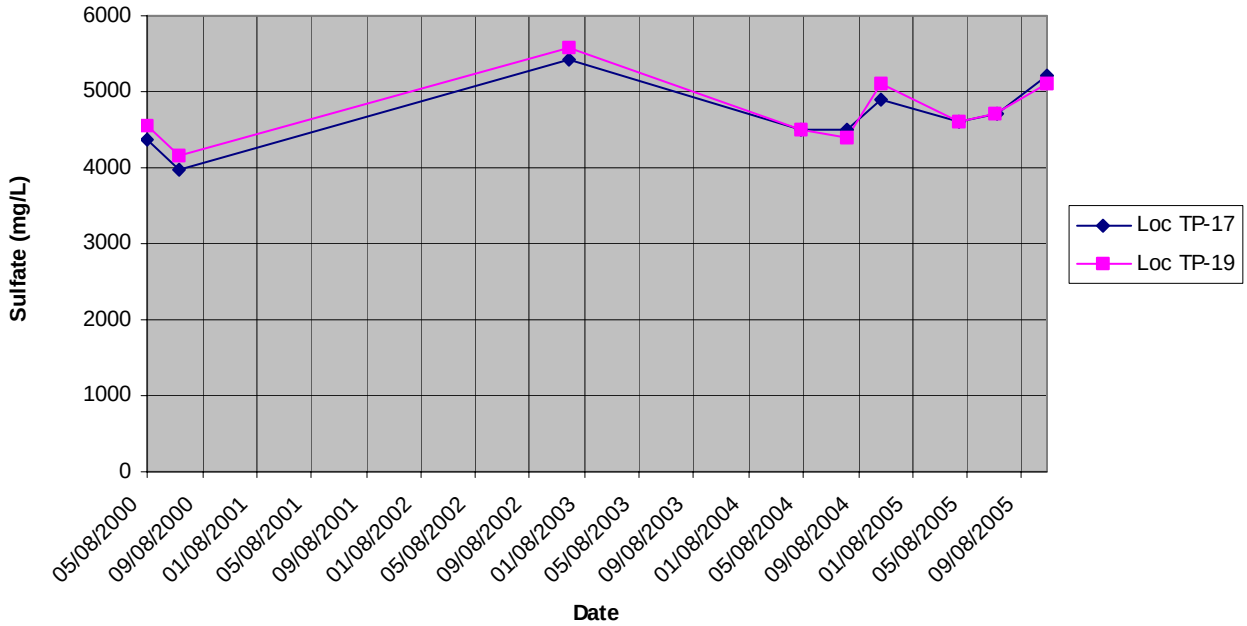
Moab Site (MOA01)

Ammonia Total as N Concentration



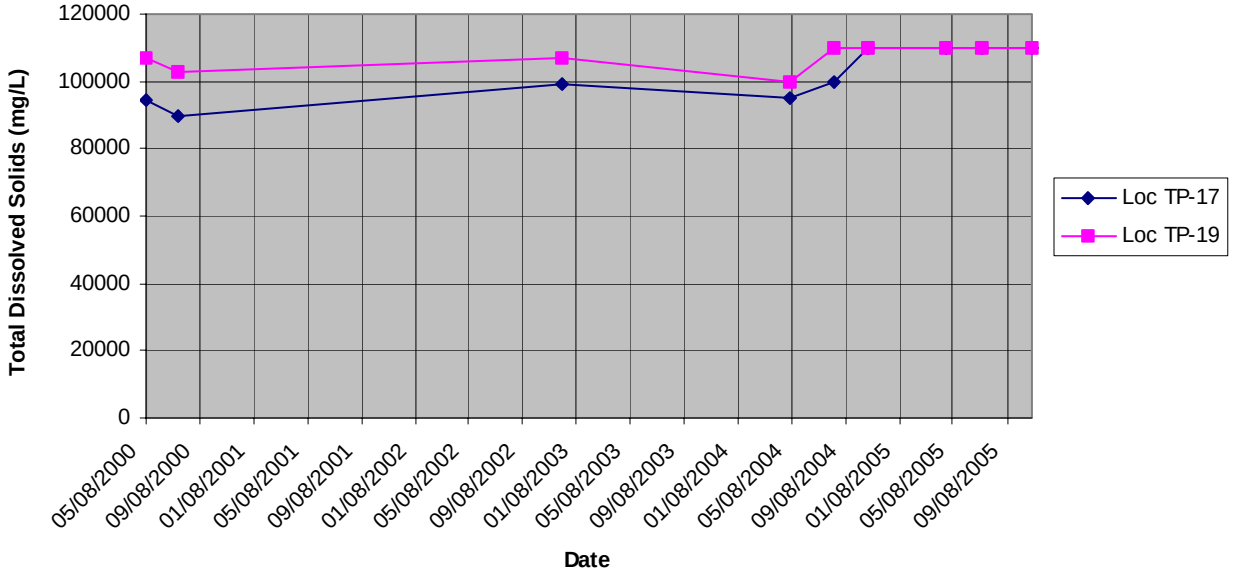
Moab Site (MOA01)

Sulfate Concentration



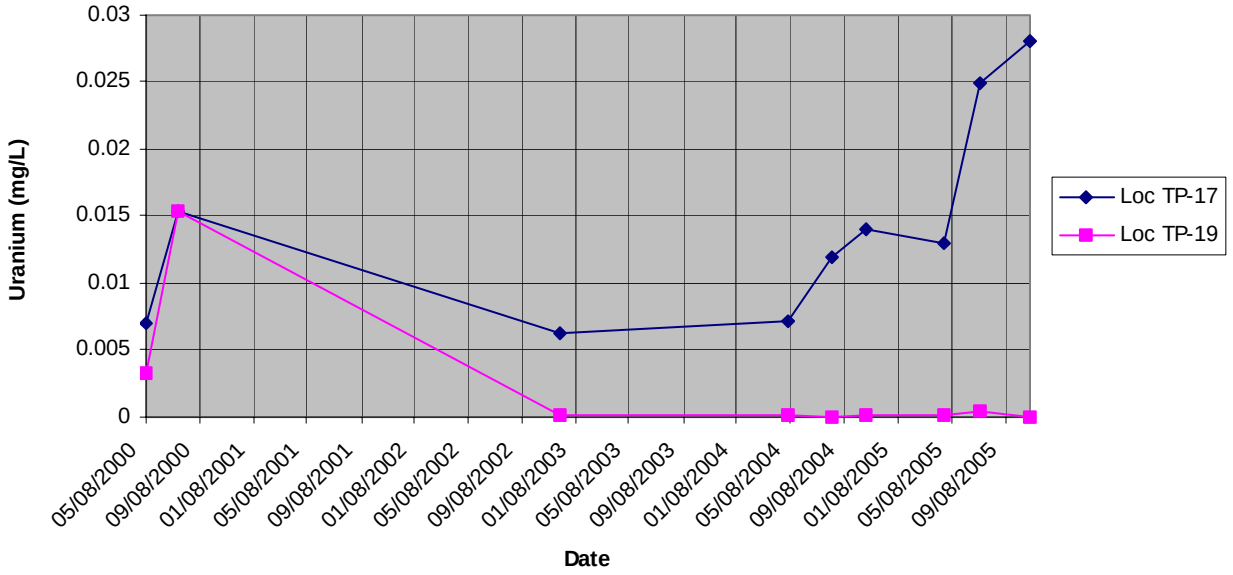
Moab Site (MOA01)

Total Dissolved Solids Concentration



Moab Site (MOA01)

Uranium Concentration



Attachment 2

Trip Report

Stoller

established 1959

Memorandum

DATE: November 17, 2005

TO: John R. Ford

FROM: Daniel L. Sellers

SUBJECT: Sampling Trip Report

Site: Moab – Ground Water and Surface Water Sampling Event – November 2005

Date of Sampling Event: November 1–4, 2005

Team Members: Dan Sellers and Emile Bettez.

Number of Locations Sampled: 14 monitor well and 16 surface water locations were sampled. Two duplicate samples (one for groundwater and one for surface water) and two equipment blank samples were collected. GPS data was collected at each surface water sampling location to indicate the actual sample point.

Locations Not Sampled/Reason: Surface locations 0221-006 and 0223-006 were not sampled due to lack of water. Wells 0401 and 0408 were not sampled during this event because they were included as part of the Interim Action Configuration 2 monthly sampling event the week of October 20, 2005. Wells 0403 and 0407 were not sampled for this event because they were included as part of the Interim Action Configuration 1 monthly sampling event the week of October 25, 2005. Surface water locations 201, 204, 217–219, 224, 225, and 232–235 were replaced with locations 260–265 in an attempt to collect samples more representative of potential fish habitat areas (see "Site Issues" below).

Field Variance: Only a 125-ml sample was collected for uranium analysis as opposed to the standard 50-ml sample volume.

Quality Control Sample Cross Reference: Following are the false identifications assigned to the quality control samples:

False Id	True Id	Sample Type	Associated Matrix	Ticket Number
2958	N/A	EB – SW Equip	Surface water	NFK 033
2959	0220-006	Duplicate	Surface water	NFK 037
2960	0405	Duplicate	Ground water	NFK 045
2961	N/A	EB – GW Equip	Ground water	NFK 049

RIN Number Assigned: All samples were assigned to RIN 05100244.

Sample Shipments: Two coolers of samples were shipped to Paragon Analytics, Inc. from Moab, Utah. The first cooler was shipped on November 3, 2005 (Airbill No. 8527 5847 8631) and the second one on November 4, 2005 (Airbill No. 8473 2967 6443). The second cooler was shipped for Saturday delivery.

Location Specific Information: All monitor wells were sampled using either dedicated bladder pumps or peristaltic pumps with dedicated tubing. Surface water locations were all sampled using portable peristaltic pumps.

The following table indicates specific comments noted at each location: If not noted, all river samples were very muddy.

Ticket Number	Sample Date	Location	Sample Depth	Description
NDV 842	11/01/2005	0438	118' bgs	Bladder pump
NDV 843	11/01/2005	0439	118' bgs	Bladder pump
NDV 844	11/01/2005	0437	97' bgs	Bladder pump
NDV 845	11/01/2005	ATP-2-S	36' bgs	Pulled 2.0 ft off bottom
NDV 846	11/01/2005	ATP-2-D	88' bgs	Pulled 2.0 ft off bottom
NDV 847	11/01/2005	TP-02	30' bgs	Pulled 1.9 ft off bottom; well cap missing.
NDV 848	11/02/2005	TP-17	29.8' bgs	Pulled 1.9 ft off bottom
NDV 849	11/02/2005	TP-18	20.9' bgs	Pulled 2.8 ft off bottom
NDV 850	11/02/2005	TP-19	29.1' bgs	Pulled 2.8 ft off bottom; sulfur odor; black color.
NFK 026	11/02/2005	0492	16.16' bgs	Pulled 1.8 ft off bottom
NFK 027	11/02/2005	0263	.17 ft bws	Side channel connected upstream to the main river channel. Water is clear and appears to flow very slowly - if not stagnant. Sample intake at 3.0" depth from surface and 2.0 ft. from west bank of side channel (taken in center). Fish swimming.
NFK 028	11/02/2005	0262	.17 ft bws	Side channel connected upstream to the main river channel. Water very turbid and flow is slow. Sample taken in middle of side channel at 3.0" depth from surface and 3.0 ft from bank.
NFK 029	11/02/2005	0264	.17 ft bws	Located behind log dam (downstream), 1.0 ft off shore of main river channel, at 3.0" depth from surface. Flow is very slow and water is very turbid.
NFK 030	11/02/2005	0236	.17 ft bws	Sample collected near debris in middle of side channel but is not connected to downstream. Water is clear and is stagnant (not flowing). Intake ~3.0" depth from surface and ~7.0 ft from west-side bank.
NFK 031	11/02/2005	0261	.17 ft bws	Sample taken from inlet off of the secondary channel. Connected downstream but not upstream. Water was turbid and swirling in the area. Intake ~2.0" depth from surface and 10 ft. from west-side bank of side channel.
NFK 032	11/03/2005	0265	.2 ft bws	Sample collected at intersection of Moab Wash and main river channel at depth of 2" from surface. Secondary channel is connected downstream to the main channel, but is barely connected upstream. Turbid & stagnant.
NFK 034	11/03/2005	0220-006	.2 ft bws	Collocated with 0405. Collected at the shore of the main channel, just downstream from a sandy protrusion with wood debris. Water very turbid. Intake depth ~2.0" and 2.0 ft. from bank
NFK 035	11/03/2005	0222-006	.08 ft bws	Collocated with 0401/0408. Sampled by rock in puddle of water. Water is clear but stagnant. Intake is 1.0" at depth. Water is not flowing.

Ticket Number	Sample Date	Location	Sample Depth	Description
NFK 036	11/03/2005	0260	.17 ft bws	Intake 3.0" at depth and ~6.0" from shore of secondary channel. Water is very turbid and has good flow.
NFK 038	11/03/2005	0207	.42 ft bws	Off main river channel, by seep. Intake 5.0" at depth and 6.0" from shore. Water turbid.
NFK 039	11/03/2005	0226-006	.17 ft bws	Collocated with TP-17. Sample collected in main channel ~1.5 ft from shore at a depth of 3.0". Water is very turbid.
NFK 040	11/03/2005	0227-006	.17 ft bws	Collocated with TP-18. Sample collected on main channel ~1.0 ft from shore at depth of 3.0". Water is turbid.
NFK 041	11/03/2005	0228-006	.17 ft bws	Collocated with TP-19. Sample collected on main channel 6.0" from shore at a depth of ~3.0". Water very turbid.
NFK 042	11/03/2005	0406	17.3' bgs	Pulled 1.0 ft off bottom.
NFK 043	11/03/2005	0405	17.6' bgs	Pulled 2.8 ft off bottom.
NFK 044	11/03/2005	0404	17.0' bgs	Pulled 1.7 ft off bottom.
NFK 046	11/03/2005	0402	16.4' bgs	Pulled 1.1 ft off bottom.
NFK 047	11/03/2005	CR3-006	.2 ft bws	Collocated with 0492. Sample collected off main channel 6.0" from shore at a depth of 2.0". Water is turbid.
NFK 048	11/04/2005	CR5	.42 ft bws	Sample collected on main channel 6.0" from shore at a depth of 5.0". Water is turbid.
NFK 050	11/04/2005	CR1	.33 ft bws	Sample collected on main channel at boat ramp 6.0" from shore at a depth of 4.0". Water is turbid.

Notes: ft bws = feet below water surface; ft bgs= feet below ground surface.

Water Level Measurements: Water levels were collected on all sampled wells.

Well No.	Sample Date	Time	Depth to Water (ft btoc)
0438	11/1/2005	1325	97.07
0439	11/1/2005	1351	98.38
0437	11/1/2005	1418	89.57
ATP-2-S	11/1/2005	1511	12.40
ATP-2-D	11/1/2005	1527	14.35
TP-02	11/1/2005	1602	20.57
TP-17	11/2/2005	0855	12.04
TP-18	11/2/2005	0944	11.40
TP-19	11/2/2005	1027	10.21
0492	11/2/2005	1213	15.06
0406	11/3/2005	1445	15.55
0405	11/3/2005	1521	14.37
0404	11/3/2005	1600	15.13
0402	11/3/2005	1625	15.29

Well Inspection Summary: Well inspections were conducted at all sampled wells. All wells were in good condition but salt spray from the evaporation system is corroding the protective casings at wells 0437, 0438, and 0439 on top of the pile. These wells are not locked due to the corrosion.

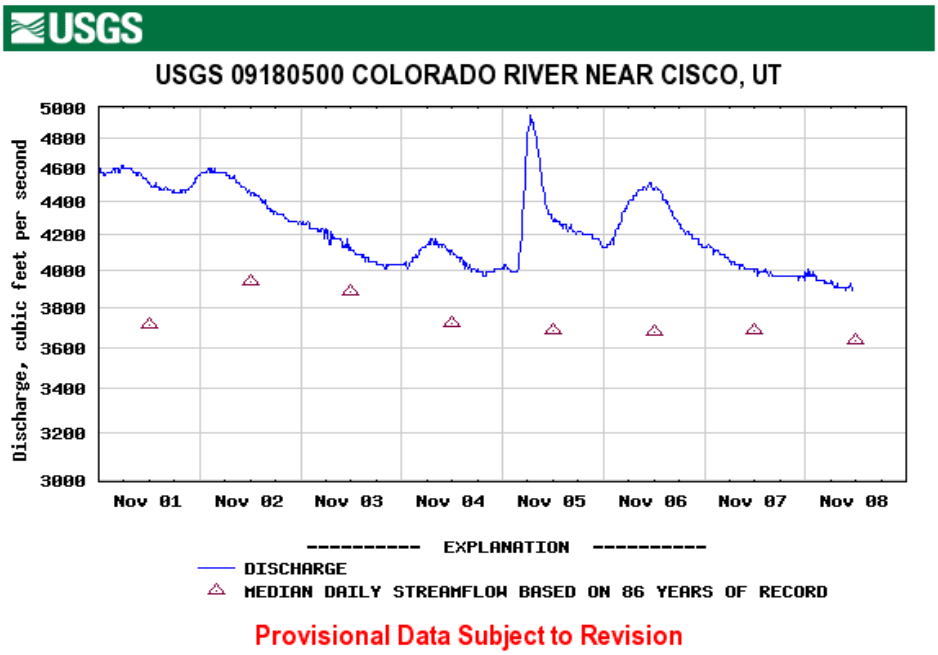
Equipment: All sampling equipment functioned properly.

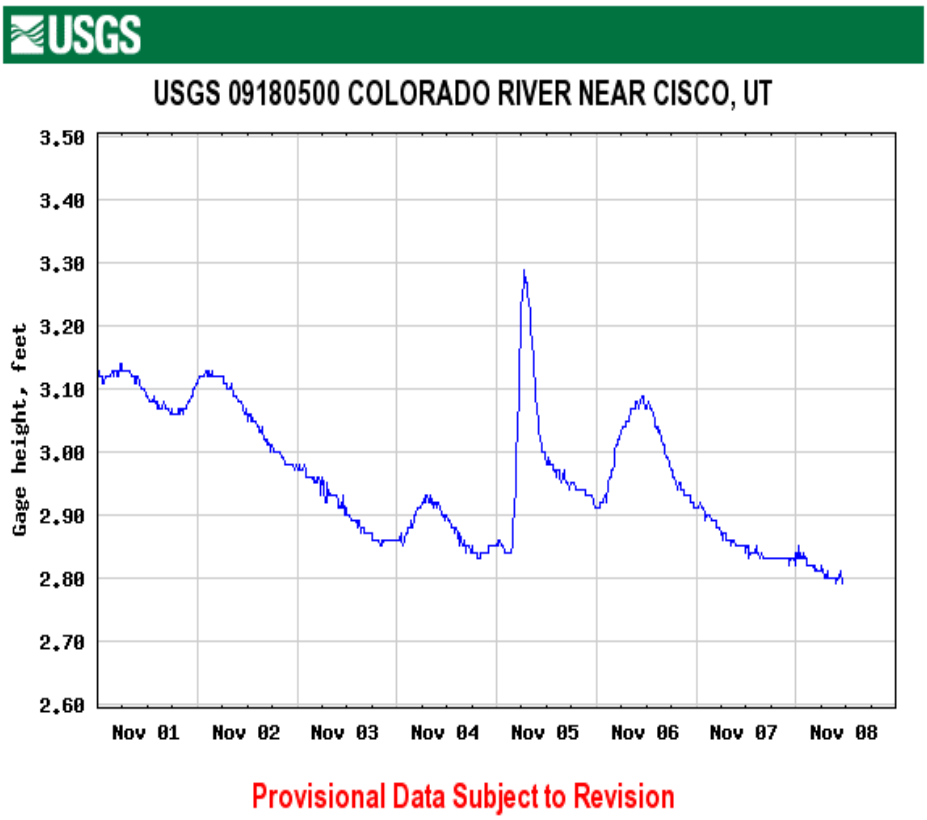
Regulatory: None.

Site Issues: "Habitat" sampling: During the November 2–3, 2005 sampling event, an attempt was made to identify sample locations that best fit the definition of "suitable habitat" for endangered fish. The purpose of this sampling was to better evaluate effects of site-related contamination in areas most critical for endangered fish survival. There were no backwater areas present during this sampling event and areas that could be considered suitable for endangered fish were very limited. There were no areas that would be considered "nursery" habitat where fish would spend considerable time. However, there were small areas that would be suitable for temporary shelter for small fish that were "passing through" this stretch of river. Those are the locations that were sampled (0600-series samples) along with existing locations that met criteria of shallow, low-velocity waters. A few samples were collected from pools that were not connected to the river at the time of sample collection. However, those pools were large enough that they could have served as temporary refuge (hours to possibly days) until river waters rose again and reconnected with those areas. Areas that were sampled appeared to have been produced by decreased river flows and lowering of river levels as opposed to formation through evaporative processes. Surrounding sediments had high water content with no evidence of salt crusts.

River Level: The following data was taken from the USGS website for the Cisco, Utah, river gage station.

Date/Time	Gage height (feet) Daily Mean	Stream-flow (ft^3/s) Daily Mean
11/01/2005	3.0975	4,530
11/02/2005	3.0589	4,448
11/03/2005	2.9078	4,129
11/04/2005	2.8759	4,062





Corrective Action Required/Taken: None.

(DLS/lcg)

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